AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings of claims in the application:

Please amend claims 11, 12, 25, 30 and 43 as follows:

LISTING OF THE CLAIMS

1. (Previously Presented) A process for the casting of metals, comprising the steps of:

forming a mold from an aggregate comprising a particulate material and a binder;

delivering a molten metal into said mold;

contacting said mold with a solvent;

cooling said molten metal such that it is partially solidified; and

removing at least a part of said mold prior to complete solidification of the molten metal into a casting.

2. (Original) A process according to claim 1, wherein said binder is water soluble.

3. (Original) A process according to claim 2, wherein the step of forming a mold includes adding water to said aggregate and binder.

4. (Original) A process according to claim 1, wherein said particulate material comprises pumice, silica sand, or a blend thereof.

5. (Cancelled)

6. (Original) A process according to claim 1, wherein said particulate material comprises glass, ceramic or refractory hollow spheres.

7. (Original) A process according to claim 1, wherein said binder comprises one or more components selected from the group consisting of phosphate glass, inorganic

silicates, phosphates, borates, sulfates including magnesium sulfate, organic binders, and mixtures thereof.

8. (Original) A process according to claim 1, wherein said mold is cured prior to delivering said molten metal into said mold.

9. (Original) A process according to claim 1, wherein said solvent comprises water.

10. (Original) A process according to claim 1, further comprising the steps of recovering a removed part of said mold and recovering at least a portion of said solvent.

11. (Currently Amended) A process according to claim 1, wherein ~~said solvent is delivered to said mold via a nozzle~~ said step of contacting comprises spraying said mold with said solvent.

12. (Currently Amended) A process according to claim 1, wherein said ~~mold is permeable to said solvent~~ step of contacting comprises permeating said mold with said solvent.

13. (Original) A process according to claim 1, wherein said solvent is delivered to said mold at a pressure from 0.03 to 70 bar and in an amount of from 0.5 to 50 liters per second per kg of casting weight per cm of casting section thickness.

14. (Original) A process according to claim 1, wherein said solvent contains at least one of a grit and a surfactant.

15. (Previously Presented) A process according to claim 1, wherein the steps of (i) removing at least a part of said mold and (ii) cooling and partially solidifying the molten metal are performed simultaneously.

16. (Original) A process according to claim 1, wherein the application of said

solvent is continued until the entire mold is removed.

17. (Original) A process according to claim 1, wherein the application of said solvent is continued until the entire casting is both cleaned from residual adhering aggregate and sufficiently cool to be conveniently handleable.

18. (Original) A process according to claim 1, wherein said steps of (i) contacting a solvent with said mold; (ii) cooling said molten metal such that it at least partially solidifies to form a casting; and (iii) removing at least a part of said mold are performed by lowering said mold into a bath of said solvent.

19-24. (Cancelled)

25. (Currently Amended) A mold for the casting of metals comprising an aggregate, said aggregate comprising a particulate or granular material which comprises a mixture of a) pumice, cenospheres, or ceramic, refractory or glass micro-bubbles, b) sand and c) a soluble binder, wherein the binder remains soluble so that said mold may be ~~eroded away~~ removed using a solvent.

26. (Cancelled)

27. (Previously Presented) A mold according to claim 25, wherein said mixture comprises pumice and sand, which is present in a ratio of from 2:1 to 6:1 by volume.

28. (Cancelled)

29. (Original) A mold according to claim 25, wherein said binder comprises a component selected from the group consisting of phosphate glass, inorganic silicates, phosphates, borates, sulfates, or organic binders, and mixtures thereof.

30. (Currently Amended) A mold according to claim 25, wherein said solvent comprises water and said mold is permeable to water.

31. (Original) A mold according to claim 25, wherein said mold has a lower heat diffusivity than a metal mold.

32. (Original) A mold according to claim 25, wherein said particulate or granular material comprises approximately spherical particles.

33. (Original) A mold according to claim 25, wherein said aggregate possesses a Mohs hardness of at least 5.

34. (Original) A mold according to claim 25, wherein said aggregate is substantially chemically and physically inert at metal molding temperatures.

35. (Original) A mold according to claim 25, wherein said mold displays minimal volume change upon heating.

36. (Original) A method for forming a casting from a molten metal, comprising the steps of:

forming at least a part of a mold from an aggregate comprised of a particulate material and a soluble binder;

delivering a molten metal into said mold;

contacting said at least a part of said mold with a solvent;

removing said at least a part of said mold; and

solidifying and cooling at least a part of the molten metal to form a casting.

37. (Original) A method according to claim 36, wherein said step of cooling comprises initially freezing a shell of solidifying metal around said molten metal with said solvent.

38. (Original) A method according to claim 36, wherein said step of cooling comprises using an already solidified and cooled portion of the casting as a chill to removed heat from a still molten portion of the casting.

39. (Original) A method according to claim 36, wherein said solvent comprises water.

40. (Original) A method according to claim 36, wherein said particulate material comprises one of silica sand; pumice; cenospheres; ceramic, refractory, or glass microbubbles; and mixtures thereof.

41. (Original) A method according to claim 36, wherein said binder comprises a component selected from the group consisting of phosphate glass, inorganic silicates, phosphates, borates, sulfates including magnesium sulfate, organic binders, and mixtures thereof.

42. (Original) A method according to claim 36, wherein said steps of (i) contacting said at least a part of said mold with a solvent; (ii) removing said at least a part of said mold; and (iii) solidifying and cooling the molten metal to form a casting are performed by lowering said mold into a bath of said solvent.

43. (Currently Amended) A process for the casting of metals, comprising:

forming a mold;

delivering a molten metal including aluminum into the mold;

contacting the mold with a solvent including water;

cooling a shell of solidified metal, formed at an interface of the molten metal and the mold, with the solvent; and,

~~maintaining a quantity of molten metal within the shell; and,~~

removing at least a portion of the mold with the solvent while molten metal remains within the shell.

44. (Previously Presented) The method of claim 43 wherein the mold comprises a particulate material including a mixture of a) hollow microspheres, cenospheres or pumice, b) silica sand, and c) a binder.

45. (Previously Presented) The method of claim 43 wherein the solvent comprises water.

46. (Previously Presented) The method of claim 43 wherein said step of delivering comprises spraying the solvent.

47. (Previously Presented) The method of claim 46 wherein the solvent is sprayed via at least one nozzle.

48. (Previously Presented) The method of claim 47 wherein two nozzles are employed and two streams of solvent are sprayed.

49. (Previously Presented) The method of claim 43 further including subsequently cooling the shell of solidified metal with the solvent until all of the molten metal is solidified.

50. (Previously Presented) The method of claim 49 further including simultaneously continuing the step of removing at least a portion of the mold with the solvent until substantially the entire mold is removed.

51. (Previously Presented) A method according to claim 43, wherein said step of cooling comprises using the shell of solidified metal as a chill to remove heat from the molten metal within the shell.